



Prepared for:

General Services Administration

Prepared by:

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**PCB Management Plan
Internal Revenue Service Center
Building Modernization
Andover, Massachusetts**

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1.0 INTRODUCTION

On behalf of the U.S. General Services Administration (GSA), URS Corporation (URS) has prepared this request for EPA approval of a cleanup of polychlorinated biphenyls (PCBs) under the Toxic Substances Control Act (TSCA). The PCB cleanup is being implemented in conjunction with ongoing demolition, renovation and modernization work at the Internal Revenue Services building in Andover, Massachusetts (the Site). This plan has been prepared in accordance with the TSCA requirements outlined in 40 CFR 761.61(a) and 40 CFR 761.79(h) and various meetings and correspondence between GSA, URS and the U.S. Environmental Protection Agency (EPA) Region 1 TSCA Coordinator.

Subsequent to Columbia Construction's subcontractor's testing (without GSA's knowledge), and during the early implementation of the Site renovation, at the request of GSA, URS undertook sampling and analysis of caulk material located within the Phase I stage of building renovation. Results of this sampling and analysis (Appendix A, Table 1) indicated that PCBs were present in the caulk at levels above the allowable concentrations as regulated by TSCA (50 parts per million or ppm). For locations within the Phase I renovation where the caulk containing PCBs above the 50 ppm threshold is placed (1) between windows and window wall panels and between the large precast concrete panels in sectors A and B (the north and east face of the building), (2) around interior doors that will be completely demolished, (3) within the front side of the loading dock, (4) within the northwest corner of the building that is being completely demolished, (5) within two louvers on the penthouse, and (6) between canopy panels around the building exterior, GSA is in the process of performing self-implementing Performance Based removal of these caulk containing assemblies in their entirety as PCB bulk product waste in accordance with 40 CFR 761.62. (Please see appendix E for source removal location key) In meetings with EPA on June 10th and June 24th, it was learned that prior EPA approval of this PCB removal work (i.e. work under 761.62) was not required. The 761.62 work is being done in conjunction with removal of the same materials in accordance with regulatory requirements for asbestos containing material (ACM), with ultimate transportation to and disposal at a TSCA licensed disposal facility that can also take the material as ACM waste.

In locations where the caulk is in direct contact with other building materials that may remain as part of the renovation process, the removals can not be done under the Performance Based self-implementing bulk product provisions at 40 CFR 761.62. Specifically, where window caulk is in contact with the concrete foundation, lintel steel or masonry brick, and where caulk is placed between brick sections (both white brick and red brick) or between brick and door frames, vents or similar wall penetrations, these materials need to be addressed as PCB remediation waste and a cleanup plan must be submitted to EPA accordingly. Therefore, this plan provides the site characterization, notification and certification required pursuant to TSCA 40 CFR 761.61(a) and includes the anticipated scope, approach and schedule for abating the caulk containing PCBs and the porous and non-porous surfaces in contact with this caulk.

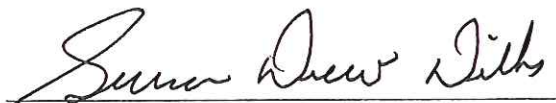
1.1 Contact and Certification

The GSA person providing this notification and certification who will be responsible for this project Mr. Surran Drew Dilks, Authorized Signatory for GSA. His contact information is provided below:

Surran Drew Dilks, PE
Project Management Branch Chief
Design and Construction Division
Public Buildings Service
New England Region
U.S. General Services Administration
10 Causeway Street
Boston, MA 02222
Office (617)565-8616

I certify that I am the person in charge of the PCB cleanup, representing the owner of the property where the PCB remediation waste is located. I certify that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site are on file at the location designated above and are available for EPA inspection.

U.S. General Services Administration



Surran Drew Dilks
Authorized Signatory

18 OCT 2010

Date

2.0 SITE BACKGROUND & PROJECT OVERVIEW

On October 2, 2009 GSA initiated building renovation activities at an approximately 36 acre site in Andover, Massachusetts, which is currently occupied by the IRS. GSA is renovating the IRS Service Center located at 310 Lowell Street in Andover, Massachusetts to modernize outdated building systems, provide updated interior finishes, and reconfigure space for the IRS. As the nation moves toward electronic filing of taxes, the space use of this facility will change from tax processing to office use. This project will serve to make a flexible workspace in an effort to keep up with the changing requirements for the IRS. The work items that will be undertaken as part of the modernization include the replacement of select windows and exterior wall penetrations and repair of their associated infrastructure, roof replacement, replacement of interior finishes, and removal, repair or replacement of various building systems including plumbing, HVAC, electrical and lighting, fire protection and security. The general layout of the building renovation and the phases of construction are shown on the plan view provided in Appendix B. The IRS building Phase I renovation is expected to be completed in July 2011.

2.1 Site Characterization

Subsequent to Columbia Construction's subcontractor's testing (without GSA's knowledge), at the request of GSA, URS took initial samples of window caulk material on June 14, 2010. A total of 40 samples were collected of caulk from locations throughout the phase I renovation of the modernization project. Locations were selected by GSA and included window caulk, expansion joint caulk, and caulk between various building materials, e.g. between concrete columns and steel frames, between precast panels and adjoining concrete, and between bricks and steel frames. Samples were delivered at ambient temperature to AmeriSci laboratories in Weymouth, Massachusetts for analysis using EPA Method 8082. Extraction methods were not specified, and surrogates could not be run on the samples due to dilution. As such these samples are considered screening level data, usable to confirm presence or absence of PCBs and relative magnitude.

The June 14, 2010 sampling revealed levels of PCBs in caulk that ranged from a low of 3.4 ppm (sample P002, grey louver caulk) to a high of 134,000 ppm (sample P005, white caulk around precast concrete panel). Every sample had at least some PCBs detected, and the majority of the samples were in the thousands of ppm range, with an average of 34,905 ppm. Only 5 of the samples taken within the phase I renovation project area were below the 50 ppm threshold. All results were for Aroclor 1254. Table 1 presents a description of the sampled media and the analytical results of 35 of these initial 40 samples. (Note that one sample could not be analyzed by the lab and four of the forty samples were for roof materials that are not part of the phase I renovation project. These are therefore not included on Table 1.) The complete laboratory report is included in Appendix A.

Based on the results of the initial round of sampling, GSA contacted the EPA regional TSCA coordinator July 2010 to review the results and request input on how best to

proceed with the next round of sampling and subsequent response actions. After meetings with the EPA TSCA coordinator at the site on June 10, 2010 and June 24, 2010, GSA undertook a pilot program with two of the window walls in the courtyard area to evaluate the alternatives for remediating the steel lintels and foundation concrete in direct contact with the window caulk. GSA also removed sections of expansion joint caulk between brick sections, along with the brick, and collected samples of the brick at one inch intervals out from the caulk to determine if and how far the PCBs may have leached into the adjoining materials. As part of these pilot activities, and to provide additional site characterization, GSA requested that URS take additional caulk samples over multiple rounds between July 12, 2010 and the present. All subsequent samples were analyzed by Alpha Analytical of Westborough, Massachusetts with chemical extraction using EPA Method 3540C and chemical analysis of PCBs (Aroclors) using EPA Method 8082.

Caulk Sample Results

Additional caulk sampling undertaken since the initial June round has confirmed the presence of PCBs in the caulk materials at various locations throughout the site. Table 2 provides a description of the sample locations, sample dates and sampling results for bulk caulk sampling during this period. Laboratory reports for these samples are provided in Appendix A. Caulk sample results ranged from a low of 0.6 to a high of 166,000 ppm of PCBs detected, again with Aroclor 1254 as the predominant constituent. The samples with the highest levels of PCBs were generally from the area on the north side where the precast concrete panels are joined by caulked expansion joints. Although there is a large order of magnitude variation between caulk samples, the relative high or low results do not appear to follow a pattern, i.e. caulk used in a particular application or caulk of a particular color is not consistently higher or lower than other types.

Porous Material (Brick and Concrete) Sample Results

In locations where the impacted caulk came in contact with porous materials, including white brick, red brick and concrete foundations, samples of the adjoining porous material were tested to determine whether the PCBs had penetrated into the underlying brick or concrete. Brick samples were collected by removing the bricks adjacent to the caulk, and chiseling off brick material samples at specific depth intervals away from the caulk line. One to one and a half inch depth intervals were collected as discreet samples with a total depth of one to three inches, to get a depth profile for PCB migration into the porous material. A total of 13 brick samples were collected, 6 from from the segments of brick within 1 to 1.5 inches of the caulk, and 7 from segments of brick 1.5 to 3 inches away from the caulk. Table 3 provides a description of the sample locations, sample dates and depths and results for the brick samples. Laboratory reports for these samples are provided in Appendix A. Brick sample results from the segments of brick within 1 to 1.5 inches of the caulk ranged from a low of non-detect to a high of 1.7 ppm, predominantly Aroclor 1254. All of the brick sample results from the segments of brick that were 1.5 to 3 inches away from the caulk were non-detect, with the exception of one sample at 0.0884 ppm.

Steel Wipe Sample Results

The building modernization project design anticipates maintaining and using the existing steel structural elements, including the steel lintels above the window walls. Where the lintels are in direct contact with the caulk, these non-porous materials may contain PCBs on the surface after the visible caulk is removed. GSA, as part of its pilot study, sampled the steel lintels under various conditions as follows:

- Wipe samples were collected of the lintel steel after the window wall and all visible caulk was removed
- The steel was cleaned using an initial solution of Peel-Away® in accordance with manufacturer's instructions and post cleaning wipe samples were collected

Appendix D contains the product information for Peel-Away®. Wipe samples were collected after each cleaning of the steel using standard TSCA methodology, hexane wipes and 100 cm² templates. A total of 8 wipe samples were collected from the steel, 3 prior to cleaning and 5 after cleaning with Peel-Away®. Results prior to cleaning ranged from 279 to 726 ug/100 cm². The post-cleaning sample results ranged from 1.64 to 16.88 ug/100 cm² of total PCBs. Table 4 provides a description of the sample locations, sample dates and results for the wipe samples. Laboratory reports for these samples are provided in Appendix A.

Air Monitoring Results

In meetings and discussions with EPA, GSA agreed to perform ambient air monitoring of the occupied side of the IRS building whenever PCB remediation will be taking place in close proximity to the barrier separating phase 1 from phase 2. A baseline ambient air monitoring program was undertaken in August and September 2010 to establish ambient or background levels in the occupied side of the building prior to any PCB remedial work being undertaken. A representative total of 6 ambient air samples were collected, two samples per day on three separate days spread over three weeks.

URS collected samples from the indoor air space in accordance with the USEPA TO-10a methodology for the collection and analysis of low volume samples. The following sampling steps were undertaken:

- Sampling equipment included a Personal Sampling Pump and polyurethane foam (PUF) medium sample cartridge.
- Sample collection and volume duration was selected to achieve a minimum reporting limit for the sampling and analysis of 100 ng/m³. Sample volume flow rates ranged from 1.8 to 2.1 l/min, combined with sample durations between 180 and 195 minutes.
- Sample collection and analysis will follow Method TO-10a of the EPA *Compendium of Methods for Toxic Organic Air Pollutants* (January 1999)
- Samples were analyzed using soxhlet extraction and PCB homolog analysis in accordance with EPA Method 680.

Table 5 provides a description of the sample locations, sample dates and raw and calculated results for the ambient air samples. Laboratory reports for these samples are provided in Appendix A. Calculated ambient air sample results ranged from a low of non-detect to a high of 481.48 ng/m³, with an average indoor air baseline concentration of 177.58 ng/m³ in the occupied space. To provide a relative reference, this average level is well below the EPA published screening level for adults in schools (<http://www.epa.gov/pcbsincaulk/maxconcentrations.htm>).

2.2 Nature and Extent of PCB Impacts

At the IRS building a large portion of the caulk material that surrounds windows, doors and other wall penetrations and that makes up expansion joints between various building materials contains PCBs as indicated in Section 2.1 above and are therefore considered *PCB bulk product waste*. Where these materials are being removed as a complete assembly intact with the adjoining structures, that is as part of the removal of the window walls, interior doors and the canopy, these materials are being removed under the self-implementing provisions of TSCA 40 CFR 762.

Where the caulk materials have come in contact with adjacent porous materials (concrete and brick) or with adjacent non-porous materials that must remain in place (steel lintels), these adjacent materials have been impacted to varying degrees by the adjoining caulk. The brick samples from the first 1 to 1.5 inches immediately below or adjacent to the caulk was typically impacted by PCBs, but deeper intervals of brick were not impacted above 1 ppm.

The initial pilot study was not successful in identifying a consistently successful and appropriate method for removing the PCBs from the impacted steel. This method, which involved application of the product name Peel-Away® in accordance with manufacturer's directions, had general success, but still left up to 16.88 ug/100 cm² PCBs on the steel as shown in the five post-cleaning confirmatory samples. Three of the five post-cleaning samples had total PCB levels above the 10 ug/100 cm² standard required for future unrestricted use of the steel. GSA is continuing to evaluate and test additional steel cleaning methods, including the use of a product called Capsur®, but is also evaluating methods for encapsulating the structural steel with flashing to eliminate the exposure to residual PCBs. Appendix D contains the product information for Capsur®.

Therefore, for purposes of this plan, the location and extent of the contaminated area to be remediated includes

- the caulking and caulk expansion joints in place between various building materials including concrete, brick and wall penetrations, including windows, doors and vents
- the adjoining first one and one half inches of brick materials and one inch of concrete materials immediately adjacent to the impacted caulk
- the adjoining structural steel immediately adjacent to the impacted caulk

3.0 CLEANUP PLAN

This cleanup plan is intended to address residual PCBs that may remain in concrete foundation walls, brick fascia and steel lintels after removal of the PCB bulk product associated with the window walls and precast concrete panels in sectors A and B and the courtyard area. Caulk that remains in place around wall penetrations and between panels on the north and west building elevations are not addressed here, but will be addressed in a subsequent amendment to this plan.

3.1 Concrete Foundation Walls

Across the length of the concrete foundation walls in sectors A and B and the courtyard, the only locations where the caulk PCB bulk product waste was in contact with the concrete foundation were where the wall panels of precast concrete panels were attached to the steel columns, as the caulk was used to seal the joint between the steel, the wall corner and the foundation. As such, although there is considerable length of foundation wall within this area, the actual length of area potentially impacted by PCB bulk product is limited to approximately 65 linear feet.

Primary Approach

The primary approach for addressing these areas will be through encapsulation. The components of the concrete sill encapsulation plan are illustrated in Appendix C and described below:

- Provide visual inspection of caulk removal (completed as source removal of bulk product)
- Paint the concrete with blaze marker paint at each point where steel columns remain to clearly demarcate the potential locations for caulk-impacted concrete where the precast panels were originally installed.
- Level the concrete sill where necessary to align with floor slab through application of surface mortar, concrete or pressure treated lumber.
- Paint the exposed face of the concrete foundation wall (sill) with two coats of epoxy to ground level, (ICO Gel by International Coatings, or equivalent - see product detail in Appendix C), each coat to be a different color
- Install continuous metal flashing to cover leveled sill and extend over front of foundation wall
- Seal (caulk) joint between flashing and concrete

The use of both a double layer epoxy paint coating and metal flashing will provide a double layer to isolate the underlying concrete and prevent potential exposure. The

new window curtainwall will be installed in front of the existing steel columns and bolted to the foundation sill. The majority of the bolts to anchor the curtainwalls and to reinforce the steel columns will be installed outside of the area where the PCB bulk product was in contact with the concrete sill. For those areas where penetrations of the concrete (curtainwall bolts, or reinforcing of the steel columns) must penetrate the potentially impacted concrete, those areas will be protected by poly, the concrete will be drilled and collected, and the area HEPA vacuumed before bolt installation.

Subsequent to encapsulation by painting and flashing, an inspection and maintenance plan will be put in place.

Alternative Approach

In the event that the concrete sill encapsulation process described above is not practicable due to specific structural or architectural requirements, an alternate approach will be implemented involving removal of concrete as PCB remediation waste. This alternate process is described as follows:

- Provide visual inspection of caulk removal (completed as source removal of bulk product)
- Protect area around former caulk location with poly and remove concrete adjacent to the impacted caulk to a depth of one inch and approximately two inches out laterally from the former PCB caulk location
- Sample to confirm that this depth is adequate to capture PCB material and remove additional material if needed (based on prior sampling, it is anticipated that the PCBs will extend no more than two inches into the underlying concrete)
- Collect removed caulk and concrete as it is generated in a secure and properly-labeled container
- Transport and dispose collected materials off site as PCB remediation waste in accordance with 40 CFR 761(a)
- Implement a modified version of TSCA Subpart O confirmatory sampling requirements.
- Repeat removal, visual inspection and confirmatory sampling as needed when initial confirmation does not meet performance standards.

3.2 Steel Lintel and Brick Fascia

In sectors A and B and the courtyard, the caulk PCB bulk product waste was in contact with the length of the steel lintel above the window walls, and between the steel lintel and the brick fascia above it. The lintel and fascia brick are to remain in place after modernization. The length of steel potentially impacted by PCB bulk product is estimated to be 1,000 linear feet, and the corresponding length of fascia brick potentially impacted above the steel is 1,100 linear feet.

Primary Approach

The primary approach for addressing the steel lintel and brick fascia areas will be through encapsulation. The components of the lintel & fascia encapsulation plan are illustrated in Appendix C and described below:

- Provide visual inspection of caulk removal (completed as source removal of bulk product)
- Install adhered rubber membrane over steel lintel and first course of brick.
- Install continuous composite metal panels across lintel, over brick fascia and up and over roof curb. Overlap with roof fabric and tie to back of roof curb
- Seal (caulk) joint between new metal fascia panel and new window panel below.

The use of both adhered rubber membrane and metal panels will provide a double layer to isolate the underlying steel and brick and prevent potential exposure. Subsequent to encapsulation by membrane and metal panel, an inspection and maintenance plan will be put in place.

Alternative Approach

In the event that the steel and brick encapsulation process described above is not practicable due to specific structural or architectural requirements, an alternate approach will be implemented involving cleaning of steel removal of brick as PCB remediation waste. This alternate process is described as follows:

- Provide visual inspection of caulk removal (completed as source removal of bulk product) below the steel lintel
- Decontaminate the steel lintel to visual standard in accordance with 40 CFR 761.79 (b)
- Remove caulk above lintel and first course of brick immediately adjacent to steel lintel and approximate two inches out laterally from the PCB caulk location

- Sample to confirm that this depth is adequate to capture to PCB material and remove additional material if needed (based on prior sampling, it is anticipated that the PCBs will extend no more than two inches into the adjacent brick)
- Collect removed caulk and brick as it is generated in a secure and properly-labeled container
- Transport and dispose collected materials off site as PCB remediation waste in accordance with 40 CFR 761(a)
- Implement a modified version of TSCA Subpart O confirmatory sampling requirements.
- Repeat removal, visual inspection and confirmatory sampling as needed when initial confirmation does not meet performance standards.

For the Site PCB caulk and porous surface remediation, the performance standard that will be applied is removal to at or below 1 mg/Kg (1 ppm) total PCBs. For the Site, PCB caulk and non-porous surface remediation, the performance standard that will be applied is removal to Visual Standard No. 2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers, verified by visual inspection.

The PCB remediation waste cleanup will be performed by a qualified subcontractor to the GSA prime contractor and the actual means and methods for removing the caulk, concrete and brick and for cleaning or encapsulating the steel will be up to the contractor in consultation with GSA. GSA will require the selected contractor to provide a contractor work plan detailing the procedures that will be employed for the remediation. However, the following details and parameters will be required as part of their scope of work.

3.3 Site Preparation

Site preparation and controls will need to include preparation and submittal of an appropriate health and safety plan in accordance with applicable federal and state regulations governing such activities, including OSHA 29 CFR 1910.120, respiratory protection, personal protective equipment and establishment of remediation zones. Access to the work areas will be controlled through fencing, containment and/or barriers. The ground surface under areas that previously contained caulk PCB bulk product will be protected by polyethylene sheeting during encapsulation. If the alternative approach is required, active caulk removal areas will be contained to the extent practicable using polyethylene sheeting or equivalent to control any blowing dust or debris generated from the cleanup activities.

Wet wiping or misting shall be used to suppress dust where necessary. A combination of engineering controls (polyethylene containment), dust suppression, and PPE will be employed as part of the active removal. As such, air monitoring for PCBs within the active work areas is not anticipated during implementation. Given that the PCB

remediation work will be conducted within a controlled construction site and for the most part in areas that are vacant, unused and about to be demolished or renovated, for the majority of the work only ambient air monitoring for particulate outside of any required containment is proposed. However, when PCB remediation work will be ongoing in unoccupied areas that are reasonably close to the wall dividing the renovation space from the occupied part of the IRS center, ambient air monitoring for PCBs will also be conducted on the occupied side of the barrier as described below.

3.4 Encapsulation (Primary Method)

The selected contractor will proceed with encapsulation concurrent with replacement window wall installation. For installation work along the concrete sill, the areas with the potential for PCB impacts (areas where caulk was in contact with the concrete) are small lengths at the base of columns only. These areas will be marked in the field, and any installation work that requires drilling into or otherwise disturbing the concrete in these areas will be undertaken utilizing a combination of engineering controls (polyethylene placed to protect ground surrounding work area), dust suppression through misting, and PPE will be employed as part of the active removal. Installation of the physical barriers (double coat epoxy, adhered rubber membrane, steel flashing and/or caulk) will be installed per the manufacturers' requirements to cover the locations where PCB caulk has been removed. Visual inspection of the placement of each encapsulation layer will be completed and a record of the inspection generated as the work progresses to document that the full areas have been contained.

3.5 Caulk and Porous Material Removal and Disposal (Alternative Method)

Encapsulation is the primary approach for sectors A and B and the courtyard area, but in the event that some porous material removal is required, the selected contractor will remove the caulk material and one inch of concrete or one course of brick beside the former caulk line as described above. Caulk and porous materials in excess of the 1 ppm performance standard will be removed from the building walls by physical means, stored and disposed off site at a chemical waste landfill licensed to take TSCA materials with PCBs greater than 50 ppm. Saw cutting and physical removal is the most likely means to effectively remove the concrete and brick. The contractor's equipment shall be of sufficient power, traction and stability to maintain accurate depth of cut and minimize the amount of dust generated during the removal process.

Cleaning of the active area shall be performed in a timely manner to remove caulk, concrete, brick, dry and wet debris. At no time shall caulk or related debris be allowed to be distributed beyond the area covered by the containment systems. Captured caulk and debris shall be immediately placed in suitable waste receptacles placarded on all sides as containing PCB waste per 40 CFR 761.40 and stored in a manner consistent with 40 CFR 761.65. PCB waste containers will be placed in a secure location and containers will be maintained, secured and covered except during loading of waste in accordance with federal regulation. No intermediate stockpiling or other unsecure storage of remediation waste will be allowed.

Disposal of all waste will be in accordance with applicable state and federal regulations and 40 CFR 761.61. Waste will be shipped by a licensed transporter and sent facilities licensed to receive and dispose PCB bulk product waste and PCB remediation waste in accordance with EPA regulations. The PCB contaminated solid waste (caulk, brick and concrete) will be shipped under a hazardous waste manifest. Other solid waste, such as PPE and containment materials, will be shipped under a non-hazardous waste manifest as appropriate. Copies of all waste shipment records will be retained, included in the final report for the cleanup and available to EPA. The identification and documentation to verify acceptability of plan waste receiving facilities will be provided by the contractor in their work plan.

3.5 Structural Steel Remediation (Alternative Method)

Encapsulation is the primary approach for sectors A and B and the courtyard area, but in the event that some porous material removal is required, the selected contractor will clean the steel in place, using a double wash and rinse methodology that will achieve the visibly clean standard. Appendix D includes product details on wash solvent or solvents that will achieve this standard consistently. As part of their contractor work plan submittal, the contractor may propose additional or alternative solvents for the soluble wash and rinse and may provide for pilot testing of such alternative materials for cleaning the steel lintels.

3.6 Post-Removal Clearance (Alternate Methods)

To confirm that the PCB impacted porous materials have been adequately removed, a system of visual inspection, documentation and confirmatory sampling will be utilized. Caulk lines will be visually inspected, including photographic documentation, to verify that the removal of caulk residue and the removal of the planned depth of concrete or brick have been accomplished. Once a section passes visual inspection, confirmatory samples of concrete or brick will be collected and submitted to a laboratory for analysis.

The general locations and materials to be sampled, as well as proposed sampling frequency will be based on the small width and greater length of each section. The grid or random based statistical sampling contemplated in Subpart O of TSCA is not readily adaptable to caulk removal, and this work plan therefore should be considered a request for EPA to approve an alternate sampling and analysis scheme.

Sampling frequency will be established based on linear feet of caulk impacted porous material actually removed and visually cleared. Initially the confirmatory sampling of porous material will be performed at a frequency of one sample per 40 linear feet for the first 200 linear feet of concrete and the first 120 linear feet of brick. If these samples indicate consistently acceptable results, subsequent concrete and brick samples will be collected at a frequency of one per 200 linear feet. Because no difference in placement or removal methods between caulk types and locations is expected, the sampling frequency proposed is considered representative of the caulk.

Sampling will be done in accordance with the EPA Region 1 "*Draft Standard Operating Procedure for Sampling Concrete in the Field*" dated December 1997. Sampling equipment will be decontaminated in accordance with TSCA requirements.

Results of the visual inspection and verification sampling are expected to demonstrate that the adjacent concrete and brick have met the 1 mg/Kg performance standard. In the event that the analytical results uncover an exceedance of the performance standard, the contractor will be required to do additional saw cutting and physical removal in the affected area, and the area will be re-sampled.

For cleaned steel, verification will consist of visual inspection of cleaned steel. Areas of visual inspection will be photographed and documented, and an inspection report completed and maintained in the file. Areas that are found to contain residual visible caulk will be re-cleaned and re-inspected.

The data quality objective is to achieve sufficient quality to support the conclusion that the cleanup performance standards have been met. The TSCA required analytical process will be followed, and as with the prior sampling, chemical extraction will be completed using EPA Method 3540C and chemical analysis of PCBs (Aroclors) will be conducted using EPA Method 8082. Laboratory narratives will be required to document laboratory quality control procedures and will be reviewed to verify the necessary levels of precisions, accuracy, representativeness and completeness of the data generated during the cleanup.

3.7 Ambient Air Monitoring

Once cleanup is underway, URS will provide ambient air monitoring for PCBs once per event, or once per week for events that will extend more than one week, when PCB remediation activities are being undertaken in areas *near the occupied space*. For purposes of this proposal, URS has defined *near the occupied space* as being within 50 feet of the barrier wall separating the IRS occupied space from the renovation space.

Construction phase ambient air monitoring for PCBs will be undertaken using the same sampling and analytical procedures described above for the baseline air monitoring. A cumulative running average of the ambient air monitoring results will be calculated after each sampling event. PCB remediation work will be stopped temporarily and corrective actions taken to reduce PCB emissions if at any time the running average concentration in the occupied space exceeds the 450 ng/m³ screening threshold.

4.0 PROJECT SCHEDULE AND RECORDKEEPING

In accordance with TSCA requirements at 40 CFR 761.61(a), GSA plans to begin implementation of the plan outlined above as soon as approval is received from the EPA Region 1 TSCA Coordinator. Ideally this program will begin as soon as possible in order to maintain the overall modernization schedule anticipated by GSA. GSA estimates that the work outlined in this work plan will take place intermittently as the modernization project progresses through the building, with final completion concurrent with the completion of phase 1 in July 2011.

Following completion of the PCB caulk remediation activities, a final report documenting the completion of the work activities will be prepared and submitted to EPA. At a minimum this final report will include:

- A narrative description of the work as completed;
- Photo documentation;
- Verification analytical results and lab reports;
- Volumes of disposed materials; and
- Waste disposal documentation.

Record documents required by 40 CFR 761, including the documents referenced in the certification in Section 1 above, and documents generated during implementation of this work plan will be maintained in one central location and made available for inspection to authorized representatives of EPA.

Appendix C

Encapsulation Details

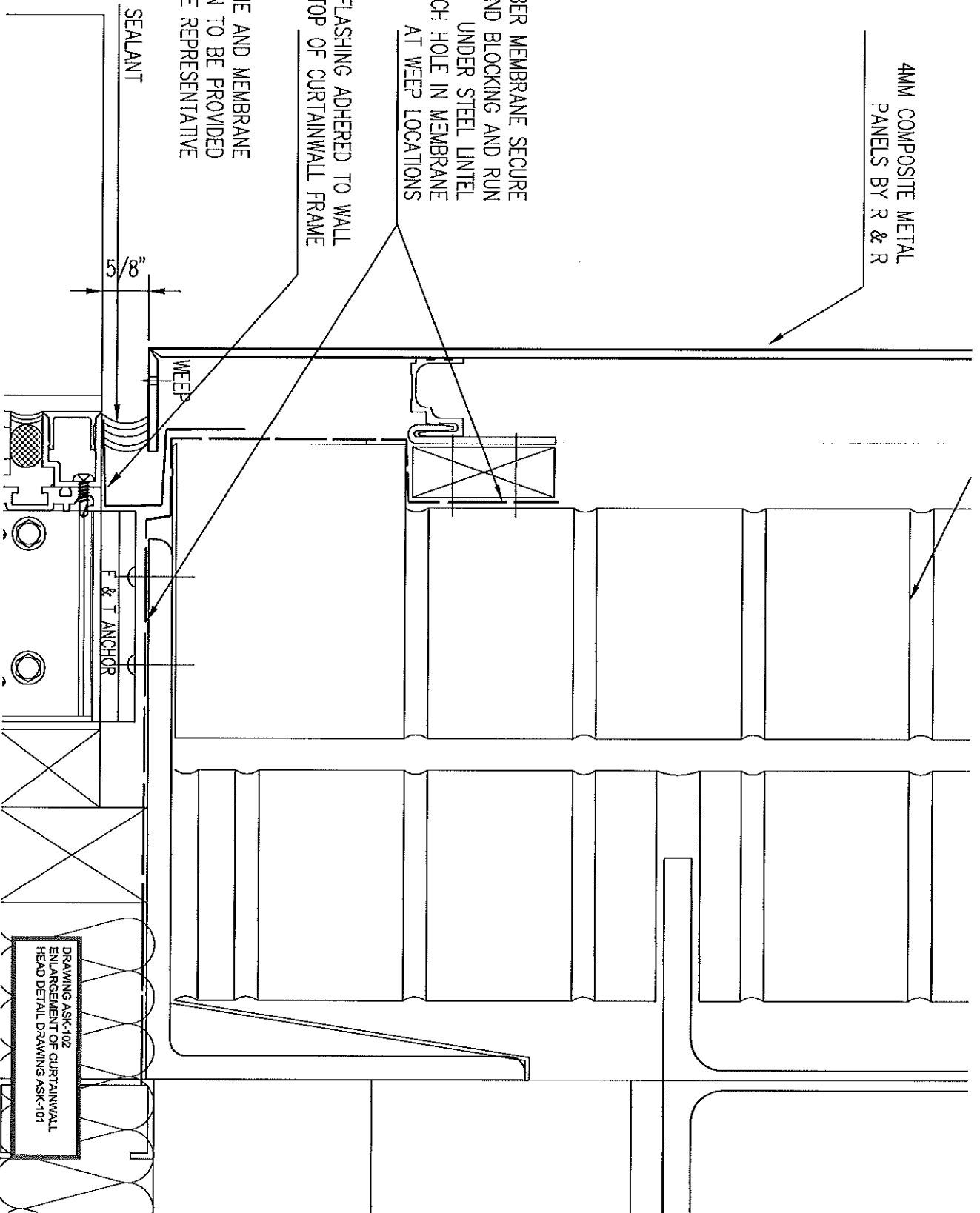
[illegible]

4MM COMPOSITE METAL
PANELS BY R & R

RUBBER MEMBRANE SECURE
BEHIND BLOCKING AND RUN
UNDER STEEL LINTEL
PUNCH HOLE IN MEMBRANE
AT WEEP LOCATIONS

MEMBRANE FLASHING ADHERED TO WALL
AND TOP OF CURTAINWALL FRAME

NOTE: RUBBER MEMBRANE AND MEMBRANE
FLASHING PRODUCT INFORMATION TO BE PROVIDED
AFTER CONFIRMED BY W.R.GRACE REPRESENTATIVE



DRAWING ASK-102
ENLARGEMENT OF CURTAINWALL
HEAD DETAIL DRAWING ASK-101



**Resilient
Epoxy
Flooring
and
Grouting
Systems**

PRODUCT DATA SHEET

ICO-GEL

Product Description

ICO-GEL™ is a three part, 100% solids epoxy patching material primarily designed for vertical and overhead applications. Its smooth, creamy consistency enables the user to skim coat surfaces that are irregular or pockmarked. ICO-GEL™ can fill holes up to 1" thick on vertical or overhead surfaces without shrinkage or sagging. For greater thickness, our ICO Gel XT™ product can be substituted.

ICO Gel has virtually no odor and adheres well to damp as well as dry concrete and masonry surfaces. Unlike cementitious or acrylic-based patch material it can be recoated in as little as six hours after application at room temperature. For faster cure our ICO Gel MC and ICO Gel FC are

available; for applications temperatures below 50°F use ICO Gel Cold Cure.

Product Application

ICO-GEL™ is most commonly used to fill bug holes, crevices and cracks on vertical walls, as well as vertical stair repairs and concrete columns. ICO-GEL™ also serves as a trowelled-on skim coat underneath our ICO Glaze wall coating system where an extra smooth surface is required. It can also be used to repair badly eroded manholes, sumps and sewers. ICO Gel is particularly suited for vertical and overhead repairs where constant dampness is present, such as bridges and dams.

Chemical Resistance

ICO-GEL™ is almost always coated with one of International Coatings' more chemically resistant coatings. A complete list is available in the International Coatings Chemical Resistant Chart or contact ICO Technical Assistance.

Physical Properties

Tensile Strength (ASTM C-307)	: 1810 psi	Hardness, Shore D (D-2240)	: 80
Tensile Elongation, unfilled (D-638)	: 10%	Bond Strength to Quarry Tile	: > 1000 psi
Compression Strength (D-695)	: 6170 psi	Water Absorption	: 0.3% in 24 hrs.

Physical Characteristics

	Mixing Ratios	ICO-GEL™		ICO-GEL MC™		ICO-GEL FC™	
		By Vol	By Wgt	By Vol	By Wgt	By Vol	By Wgt
Density, lbs/gal.							
Pt. A : 9.7	Pt. A : Pt. B	3.5:1	4.3:1	4:1	5:1	5:1	6:1
Pt. B : 8.0	Aggregate:Liquid	0.6:1	1.5:1	0.6:1	1.5:1	0.6:1	1.5:1
A&B Mixed : 9.3	Curing Times @						
Viscosity @ 77°F, cps	ICO-GEL™ -		32°F	40°F	50°F	77°F	90°F
Pt A : 38000	Pot Life		-----	-----	45min	40min	15min
Pt B : 550	Working Time		-----	-----	65min	50min	40min
A&B Mixed : 4400	Hard, (for sanding)		-----	-----	72hrs	18hrs	10hrs
	ICO-GEL MC™ -						
	Pot Life		-----	-----	45min	30min	10min
	Working Time		-----	-----	50min	40min	35min
	Hard		-----	-----	48hrs	10hrs	7hrs
	ICO-GEL FC™ -						
	Pot Life		-----	-----	10min	8min	5min
	Working Time		-----	-----	40min	35min	25min
	Hard		-----	-----	20hrs	8hrs	4hrs
	ICO GEL Cold Cure -						
	Pot Life		15min	15min	14min	-----	-----
	Working Time		45min	40min	30min	-----	-----
	Hard		24hrs	20hrs	18hrs	-----	-----
Maximum Hardness achieved after 7 days @ 77°F.							

Color Availability

Standard color: Neutral. But can be ordered in white, concrete gray and beige.

Packaging and Coverage Rates

3 Gal. Kit	: 40 SF at 1/8" thick
Bulk Pack	: 400 SF at 1/8" thick

Installation

Please refer to our Installation Guide for detailed instructions. For application as part of our ICO Glaze® ES System, refer to the Application Spec Sheet "ICO Glaze® ES Wall Coating System". Particular care must be taken to follow those instructions precisely to assure proper installation.

1. All surfaces must be cleaned by acid etching, grinding, rough sanding or needle blasting. All loose or flaking coatings and other materials must be removed. All oils, fats, greases or chemically contaminated concrete must be removed.
2. No priming is necessary, as **ICO-GEL™** is a self-priming material.
3. Mix the contents of the Part A and Part B containers in a clean, plastic bucket with a slow speed paddle mixer or electric drill for about one minute. Then add in **ICO-GEL™ Flour** slowly for another minute or so, until the mixture is uniform in color and consistency. Only mix amount of material that can be applied within stated pot life
4. Use a clean margin trowel or spatula to apply the **ICO-GEL™**. The blade should be large enough to span the depression; use a 1-1/2" blade for filling cracks.
5. Press the **ICO-GEL™** firmly into place in a wiping motion. Use enough material to overfill the opening.
6. Under normal conditions, **ICO-GEL™** can be applied up to 1" depths without sagging. For greater thickness, use **ICO Gel XT** (up to 3" per pass).

Failure to follow the above instructions, unless expressly authorized by an ICO Technical Service Representative, will void our material warranty.

Precautions

1. Do not apply greater than 1" thick at 70°F; for greater thicknesses use Gel XT
2. Do not apply ICO Gel FC above 70°F
3. Do Not apply ICO Gel Cold Cure above 50°F
4. Recoat windows without sanding at 70°F: Gel – 18 hours; Gel MC – 10 hours; Gel FC – 6 to 8 hours

Product Specification

The specified area shall receive an application of **ICO-GEL™** as manufactured by **International Coatings of Franklin Park, Illinois**. The material shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing, and application. The material shall be a low odor, 100% solids, three part epoxy system with bond strength exceeding 1000 psi on quarry tiles. It should be able to be applied on vertical surfaces up to 1" thick at 70°F in a single step application without sagging. The system must adhere to damp, as well as dry concrete. It shall be a resin-rich mixture, with an aggregate:liquid ratio not to exceed 1.5:1 by weight. The compressive strength when tested in accordance with ASTM C-579 shall not exceed 6200 psi and the tensile strength shall be 1810 psi when tested under ASTM C-307.

Mission Statement

Our mission is to provide our customers the highest possible quality products and services and by so doing, build long term relationships based on mutual trust and respect.

The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by us, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerable uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

WARRANTY - All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.



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PRODUCT DATA SHEET

ICO-GUARD 51™

Product Description

ICO-Guard 51™ is a three-part, odor free 100% solids, Bisphenol A epoxy flooring system. It is USDA approved for installation in food plants. Because of its resin-rich characteristics, it is ideally suited for hand or power troweled applications in one pass in any thickness down to 3/16", without need of a primer or top sealer coat. Such a one-step application enables the floor to be installed in one day and returned to service the next.

Its high gloss finish facilitates cleaning. Anti-slip characteristics are enhanced by addition of silica quartz, or in extremely heavy wear conditions by aluminum oxide, broadcast in during application of the floor. ICO-Guard 51™ is available in fast cure version (ICO-Guard 51FC™) that enables full cure at application temperatures as low as 32°F. ICO-Guard Cold Cure™ is the choice for temperatures down to 20°F. For coving, it is available in a coving grade, ICO Guard Cove mix.

Typical Application

ICO-Guard 51™ is particularly recommended for the food, dairy and beverage industries where its high chemical resistance, resilience and resin-rich formulation provides extra security against premature failure due to chemical attack, thermal or mechanical shock, as well as heavy wear. Normally applied over concrete, ICO-Guard 51™ also has excellent adhesion to most metal, wood and wood block, brick and tile, and vinyl tile surfaces. It has especially good bonding characteristics to damp surfaces.

Chemical Resistance

ICO-Guard 51™ is recommended for areas subjected to such chemical solutions as 50% sulfuric, 30% nitric, 30% phosphoric, 50% sodium hydroxide, and most C.I.P. cleaners. A more complete list of chemical resistance is available in the International Coatings Chemical Resistance Chart under the "ICO-Guard" heading.

Physical Properties

Tensile Strength (ASTM C-307)	: 2030 psi
Tensile Elongation (C-307)- filled	: 3%
Flexural Strength (C-580)	: 2550 psi
Compression Strength (C-579)	: 5170 psi
Hardness, Shore D (D-2240)	: 75
Bond Strength to Quarry Tile	: >1000 psi

Flammability (D-635)	: self extinguishing
Vapor Transmission Rate (E-96)	: .03 perms
Coefficient of Thermal Expansion (D-696)	: 1.7×10^{-6} per °F
Gardner Impact (D-2794)	: > 160 in.-lbs.
Water Absorption (D-570)	: 0.3% in 24 hours

Physical Characteristics

		ICO-Guard 51™		ICO-Guard 51 FC™			
Density, lbs/gal.	Mixing Ratios	By Volume	By weight	By Volume	By weight		
Pt. A 9.5	Pt. A : Pt. B	2 : 1	2.2 : 1	2.5 : 1	2.9 : 1		
Pt. B 8.6	Aggregate : Liquid	3.3 : 1	5 : 1	3.3 : 1	5 : 1		
A&B Mixed 9.2							
Viscosity@77°F, cps		Curing Times @		32°F	50°F	77°F	90°F
Pt. A 700	ICO Guard 51	Pot Life	-	-	60 min.	50 min.	25 min.
Pt. B 300	ICO Guard 51	Work Time	-	-	50 min.	60 min.	35 min.
A&B Mixed 630	ICO Guard 51	Hard, Foot Traffic	-	-	24 hrs.	15 hrs.	5 hrs.
	ICO Guard 51 FC	Pot Life	50 min.	45 min.	30 min.	10 min.	
	ICO Guard 51 FC	Work Time	5 min.	20 min.	20 min.	15 min.	
	ICO Guard 51 FC	Hard, Foot Traffic	28 hrs.	14 hrs.	3 hrs.	2.75 hrs.	
Shelf Life							
1 year at 77°F in							

Shelf Life

1 year at 77°F in unopened containers.

Maximum Hardness achieved after 7 days @ 77°F.

Color Availability

Standard colors: white, gray, dark gray, beige, yellow, red, green, blue, brown, black.

Packaging and Coverage Rates

Basic Kit	27 SF at 1/4" depth
Bulk Pack	270 SF at 1/4" depth
Drum Kit	2700 SF at 1/4" depth

Installation

Please refer to our Installation Guide for detailed instructions. Particular care must be taken to follow those instructions precisely to assure proper installation. For applications between 32°F and 50°F, use **ICO Guard FC 51** or **ICO guard Cold Cure**.

1. New concrete should be allowed to cure a minimum of 28 days or be checked with a rubber mat or plastic sheet to insure adequate curing time has occurred.
2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a pH of 7.
3. **ICO-Guard 51™** is a self priming floor, however, to help prevent excessive absorption of resin into a porous substrate, application of **ICO Primer LV** or **LV FC** is highly recommended. Allow to dry tack free.
4. The three ingredients should be mixed in the prescribed ratios, using a low speed paddle-type mixer (maximum 750 rpm), until uniform in color and consistency. Mix Part A and Part B and then slowly add the aggregate and pigment (supplied in dry form).
5. Do not mix less than the prescribed amount of any ingredient or add any solvent to the mix.
6. The prepared mix may be spread using screed strips, pin screeds, gauge rakes or notched trowels to insure a nominal 1/4" average depth.
7. Allow the rough spread material to set a few minutes before finish troweling to allow the resin to come to the surface which facilitates the smooth action of the trowel.
8. After finish troweling the surface may be backrolled with a short nap roller to remove blemishes. The roller can be slightly damp with ice water, xylene, toluene or isopropyl alcohol to prevent pickup.
9. A suitable aggregate may be broadcast onto the surface after backrolling to provide more anti-slip profile to the finished surface. It is advisable to test various types and sizes of aggregate to achieve the desired finish profile.

Precautions

Avoid skin contact with liquid Part A and Part B as they may cause skin irritation to some people. Protective hand creams and/or gloves should be used. Cleanup can be done with hot soapy water before the material starts to set. Once the material has set it can be removed with a paint stripper.

Product Specification

The specified area shall receive an application of **ICO Guard 51™** as manufactured by **International Coatings, Franklin Park Illinois**. The system shall be installed by precisely following the manufactures published recommendations pertaining to surface preparation, mixing and application. The material shall be a low odor, three part, solvent-free 100% solid, epoxy system with moderate resilience to resist thermal and mechanical shock. It should be trowel applied normally at 1/4" thickness in one application without needing a top coat. It shall be a resin-rich mix ratio of 3.3:1, **ICO-Fill™** aggregate to resin and hardener. It shall have an elongation of 3.0% when tested using ASTM C-307 and a Gardner Impact greater than 160- inch pounds when tested under ASTM D-2794. The compressive strength when tested in accordance with ASTM C-579 shall not exceed 5200 psi and tensile strength not to exceed 2030 psi as measured against ASTM C-307. The system shall be useable at temperatures down to 32°F by specifying **ICO-Guard 51FC™**. It shall be water wipeable and have excellent adhesion to wood, metal tile, brick and damp as well as dry concrete. It shall be self priming except on surfaces with extreme porosity. The system shall be unaffected by oils and greases and have high chemical resistance against such acids as 36% hydrochloric, 30% nitric, 50% sulfuric, 20% lactic and 10% acetic. It shall resist such caustics as sodium hydroxide and ammonium hydroxide.

Technical Assistance

Our many years of installation experience enable us to provide valuable input on not only proper material selection but also installation techniques that will help assure your satisfaction. We have qualified personnel to inspect your floors, analyze the cause of the problems and design procedures and specifications to prolong the useful life of your floors. We furnish detailed application specifications including drawings of necessary details to be used. We are prepared to offer job site instruction for your in-house maintenance crews or to work closely with your preferred applicator. We can also furnish a list of our network of **ICO-trained** certified applicators.

ICO-GUARD COATING™

Product Description

ICO-Guard Coating™ is a two part, 100% solids, epoxy coating. As a solvent free material, it has virtually no odor, is USDA-approved, and possesses excellent chemical resistance to most acids, alkaline and chlorine cleaners, oils, greases and common solvents. Its unusually high resilience (tensile elongation of 9%) enables it to better resist cracking and delamination under thermal shock conditions. Applied by brush, roller, squeegee, or spray it is normally applied at about 10 mils per coat or 160 SF per gallon. A two coat application is recommended to minimize pinholes and yield a more uniform appearance. It has excellent damp, as well as dry adhesion to concrete, metal and wood surfaces.

ICO-Guard Coating™ finishes to an easy-to-clean, high gloss surface. Anti-slip characteristics are enhanced by broadcasting in silica sand. Higher abrasion resistance can be obtained by adding fine (240 grit or finer) aluminum oxide to the top coat. For cold temperatures (down to 32°F) or faster turnaround times, our faster cure "FC" version is available. For even faster cures, our "XFC" version is recommended (see cure times below).

Product Application

ICO-Guard Coating™ is particularly suited for interior floor applications where light vehicular traffic or foot traffic is present and where constant moisture and/or corrosive conditions exist. Typical applications include mezzanines for food processing plants, food warehouses and distribution centers, and cleanroom floor applications. For vertical surfaces, our high viscosity ICO-Glaze™ system is recommended. Where heavy traffic is expected ICO-Guard SL™ or ICO-Guard 51™ should be used.

Chemical Resistance

ICO-Guard Coating™ is recommended for areas subjected to such chemical solutions as 50% sulfuric, 20% nitric, 30% phosphoric, 20% lactic, 50% sodium hydroxide, toluene and xylene. A more complete list of chemical resistance is available in the **International Coatings Chemical Resistance Chart** or contact **ICO Technical Assistance**.

Physical Properties

Tensile Strength (ASTM D638)	: 1560 psi	Gardner Impact Strength (D-2794)	: 80 in lbs.
Tensile Elongation (D-638)	: 9%	Bond Strength to Quarry Tile	: > 1000psi
Flexural Strength (D-790)	: 4140 psi	Vapor Transmission Rate (E-96)	: .03 perms
Hardness, Shore D (D-2240)	: 80	Water Absorption (D-570)	: 0.2% in 24 hours
60° Gloss	: 100	Taber Abrasion (D-1044)	
		CS17, 1000 g, 1000 cycles	: 105 mg. loss

Physical Characteristics (Unless otherwise designated, all data are for regular cure material, gray.)

Density, lbs/gal.	Viscosity@77°F, cps	Mixing Ratios	By Volume	By Weight		
Pt. A : 15.4	Pt. A : 5500	Pt. A : Pt. B	2.5:1	4.5:1		
Pt. B : 8.6	Pt. B : 300	Pt. A : Pt. B, FC	3.8:1	7:1		
A&B Mixed : 13	A&B Mixed: 2000	Pt. A : Pt. B, XFC	3.3:1	5.6:1		
Curing Times @		21°F	32°F	50°F	77°F	90°F
ICO Guard Coating	Pot Life	-	-	60 min.	50 min.	25 min.
ICO Guard Coating	Hard, Foot Traffic	-	-	24 hrs.	16 hrs.	5 hrs.
ICO Guard Coating, FC	Pot Life	-	20 min.	20 min.	15 min.	10 min.
ICO Guard Coating, FC	Hard, Foot Traffic	-	35 hrs.	18 hrs.	6 hrs.	2.5 hrs.
ICO Guard Coating, XFC	Pot Life	25 min.	20 min.	15 min.	10 min.	-
ICO Guard Coating, XFC	Hard, Foot Traffic	72 hrs.	24 hrs.	12 hrs.	4 hrs.	-

Shelf Life 1 year at 77°F in unopened containers.

Maximum Hardness achieved after 7 days @77°F.

Color Availability

Standard colors: white, gray, dark gray, beige, yellow, red, green, blue, brown, black.

Packaging and Coverage Rates (for 10 mil coverage)

1 gallon kit	:	160 SF
4 gallon kit	:	640 SF
100 gallon drum kit	:	16,000 SF

Installation

Please refer to our Installation Guide for detailed instructions. Particular care must be taken to follow those instructions precisely to assure proper installation. Do not apply below 50°F unless using ICO-Guard Coating™ in the FC or XFC version.

1. New concrete should be allowed to cure a minimum of 28 days or be checked with a rubber mat or plastic sheet to insure adequate curing time has occurred.
2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a pH of 7.
3. The two ingredients should be mixed in the prescribed ratios, using a low speed mixer (maximum 750 rpm). Mix Part A for about 1 minute then add Part B and mix for at least another minute until uniform in color and consistency.
4. No primer is necessary, as **ICO Guard Coating™** is self priming. However, if floor is particularly porous, a first coat of **ICO-Primer™ LV**, **ICO-Primer™ FC** or **ICO-Guard Coating™** thinned with toluene, xylene or MEK up to 10% by volume is recommended to seal the floor. Allow primer coat to dry.
5. Apply the mixed material with a short nap roller, a squeegee or a brush. Apply approximately 160 SF per coat to achieve 10 mils of coating.
6. Apply a second coat after the first coat is tack free, but before 16 hrs at 75°F. If more time has elapsed the first coat should be sanded before recoating.
7. A suitable aggregate may be broadcast onto the surface and backrolled to provide a more anti-slip profile to the finished surface. It is advisable to test various types and sizes of aggregate to achieve the desired finish profile.

Precautions

Avoid skin contact with liquid Part A and Part B as they may cause skin irritation to some people. Protective hand creams and/or gloves should be used. Cleanup can be done with hot soapy water before the material starts to set. Once the material has set it can be removed with a paint stripper.

Product Specification

The specified area shall receive an application of **ICO Guard Coating™** as manufactured by **International Coatings, Franklin Park Illinois**. The system shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing and application. The material shall be a low odor, solvent-free, 100% solids, high gloss flexible epoxy system with good resilience to resist thermal and mechanical shock. The system must adhere to damp as well as dry concrete, wood, metal, tile, terrazzo, and sound existing epoxy and urethane coatings. It shall have an elongation of 9% in the unfilled form when tested using ASTM D-638. The film hardness shall be a Shore D of 80. The system shall be unaffected by oils, greases and resist such chemicals as 36% hydrochloric acid, 20% nitric acid, 50% sulfuric acid and 50% sodium hydroxide.

Technical Assistance

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Mission Statement

Our mission is to provide our customers the highest possible quality products and services and by so doing, build long term relationships based on mutual trust and respect.

The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by us, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

WARRANTY - All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.



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PRODUCT DATA SHEET

ICO-LASTIC

Product Description

ICO-Lastic is a two part, 100% solids epoxy-modified urethane. With elongation of 140%, it combines the elastomeric properties of a urethane with the excellent dry and damp adhesion to concrete, metal and wooden surfaces of an epoxy. Normally applied by roller or squeegee down to a minimum thickness of 20 mils, ICO-Lastic offers an impermeable moisture barrier against standing water. Applied by trowel in a "gun grade" version, it can also be used for interior expansion joints where moderate movement is expected. At minimum 60 mil thick applications, ICO-Lastic offers excellent crack bridging characteristics for inside or outside concrete structures. It will withstand light to moderate towmotor and automobile traffic.

Product Application

ICO-Lastic is used in food and beverage plants, where its no odor characteristics are desirable, as a waterproof membrane underneath acid brick or tile floors. Applied at approximately 60 mils, it provides a good secondary containment barrier against some acids, caustics and fuel oils. For more highly corrosive areas, where crack bridging is required, ICO-Lastic is applied beneath one of our quarter inch higher chemical resistant epoxy overlayments. ICO-Lastic also acts as a complete waterproofing barrier for parking garages, balconies, walkways and roof decks where color change is not objectionable.

ICO-Lastic Gun Grade offers a resilient (100% tensile elongation) yet tough caulking material that will hold up to normal fork lift traffic in expansion joints where moderate movement is expected. For old concrete floors, where little movement is expected, use of our 100% solids epoxy, ICO Caulk, is preferred.

Chemical Resistance

ICO-Lastic can withstand up to 72 hours immersion in the following chemicals

Ammonium Nitrate	Diesel Fuel	Lactic Acid, 20%	Sugars
Beer	Ethylene Glycol	Mineral Spirits	Sulfuric Acid, 20%
Bleach	Ferric Chloride	Palm Oil	Tartaric Acid
Boric Acid	Hydrogen Sulfide	Salt Brine	Urine
Carbonated Beverages	Jet Fuel	Sodium Hydroxide, 50%	Vinegar
Chlorine Water	Kerosene	Sodium Hypochlorite, 10%	Water, Deionized
Citric Acid			

Physical Properties

(Unless otherwise designated, for ICO Lastic)

Tensile Strength (ASTM C-638)	: 1480 psi	Rebound Resiliency, %	: 30%
Tensile Elongation (D-638)	: 140%	Hardness, Shore A	: 80
Tensile Elongation, Gun Grade	: 100%	Hardness, Shore A, Gun Grade	: 80
Bond Strength to Concrete	: 400 psi (concrete failed)	Water Absorption	: 2% after 7 days

Physical Characteristics

(Unless otherwise designated, for ICO-Lastic)

Density, lbs/gal.		Gun Grade	(Unless otherwise designated, for ICO-Lastic)			
Pt. A :	9.4	10.1	Mixing Ratios	By Volume	By Weight	
Pt. B :	7.9	7.9	Pt. A : Pt. B	8:1	9.7:1	
A&B Mixed :	9.2	9.9	Pt. A : Pt. B, Gun Grade	8.9:1	11.4:1	
Viscosity@77°F, cps		Gun Grade	Curing Times @	32°F	50°F	77°F
Pt. A :	15,200	120,800	Pot Life	30min.	30 min.	30 min.
Pt. B :	380	380	Work Time	45 min.	45 min.	35 min.
A&B Mixed :	10,880	60,000	Hard Foot Traffic	68 hrs	24 hrs.	9 hrs.
					8 hrs.	

Shelf Life

1 year at 77°F in unopened containers

Maximum Hardness achieved after 7 days @ 77°F.

Color Availability

Standard colors: gray, red, black and white

Packaging and Coverage Rates

ICO-Lastic (for 20 mils)	ICO-Lastic Gun Grade
1 gallon kit : 80 SF	1 gallon kit : 75 LF, 1/2" x 1/2"
4 gallon kit : 320 SF	4 gallon kit : 300 LF, 1/2" x 1/2"

Installation

Please refer to our installation Guide for detailed instructions. Particular care must be taken to follow those instructions precisely to assure proper installation.

1. New concrete should be allowed to cure a minimum of 28 days and/or be checked with a rubber mat or plastic sheet to insure adequate curing time.
2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a pH of 7.
3. ICO Lastic is a self-priming material; however application of a single coat of ICO Primer LV over porous substrates is recommended to help prevent outgassing. Apply at a coverage of 180-200 SF/gallon and allow to dry.
4. Mix Part A and Part B components at slow speeds (< 700 rpm) with a Jiffy style mixer for at least two minutes, until uniform in color. See Tech Bulletin 117 for details.
5. Pour the mixture onto the substrate and spread with a squeegee, trowel or roller at a coverage rate of no greater than 80 SF/gallon (for 20 mils).
6. If an anti-slip surface is required, broadcast in aggregate.
7. No top coating is required; however, if a harder wear resistant surface or higher chemical resistance is required, apply the appropriate ICO Trowelled system to a minimum thickness of one quarter inch.

Precautions

ICO-Lastic is a 100% solids material, so no special ventilation is required. It is rated as corrosive and hence, proper precautions should be taken regarding skin and eye protection. Consult MSDS prior to use.

Product Specification

The specified area shall receive an application of ICO-Lastic as manufactured by International Coatings of Franklin Park, Illinois. The material shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing, and application. The material shall be a low odor, solvent-free, 100% solids epoxy-modified polyurethane with no toxic by products. The material shall be available in a variety of acceptable colors. It shall have an elongation of at least 140% at 70°F when tested using ASTM D638. Material shall also have a tensile strength of at least 1400 psi and bond strength greater than the cohesive strength of concrete. The system shall be unaffected by most caustics, oils, greases, and many low strength acids.

Technical Assistance

Our many years of installation experience enable us to provide valuable input on not only proper material selection but also installation techniques that will help assure your satisfaction. We have qualified personnel to inspect your floors, analyze the cause of the problems and design procedures and specifications to prolong the useful life of our floors. We furnish detailed application specifications including drawings of necessary details to be used. We are prepared to offer job site instruction for your in-house maintenance crews or to work closely with your preferred applicator. We can also furnish a list of a network of ICO trained certified contractors.

statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

WARRANTY - All products manufactured by us are warranted to be first class material and free from defects in material and workmanship. Under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us or to the net purchase price of any such products. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further use or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL. WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO MAKE OR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.

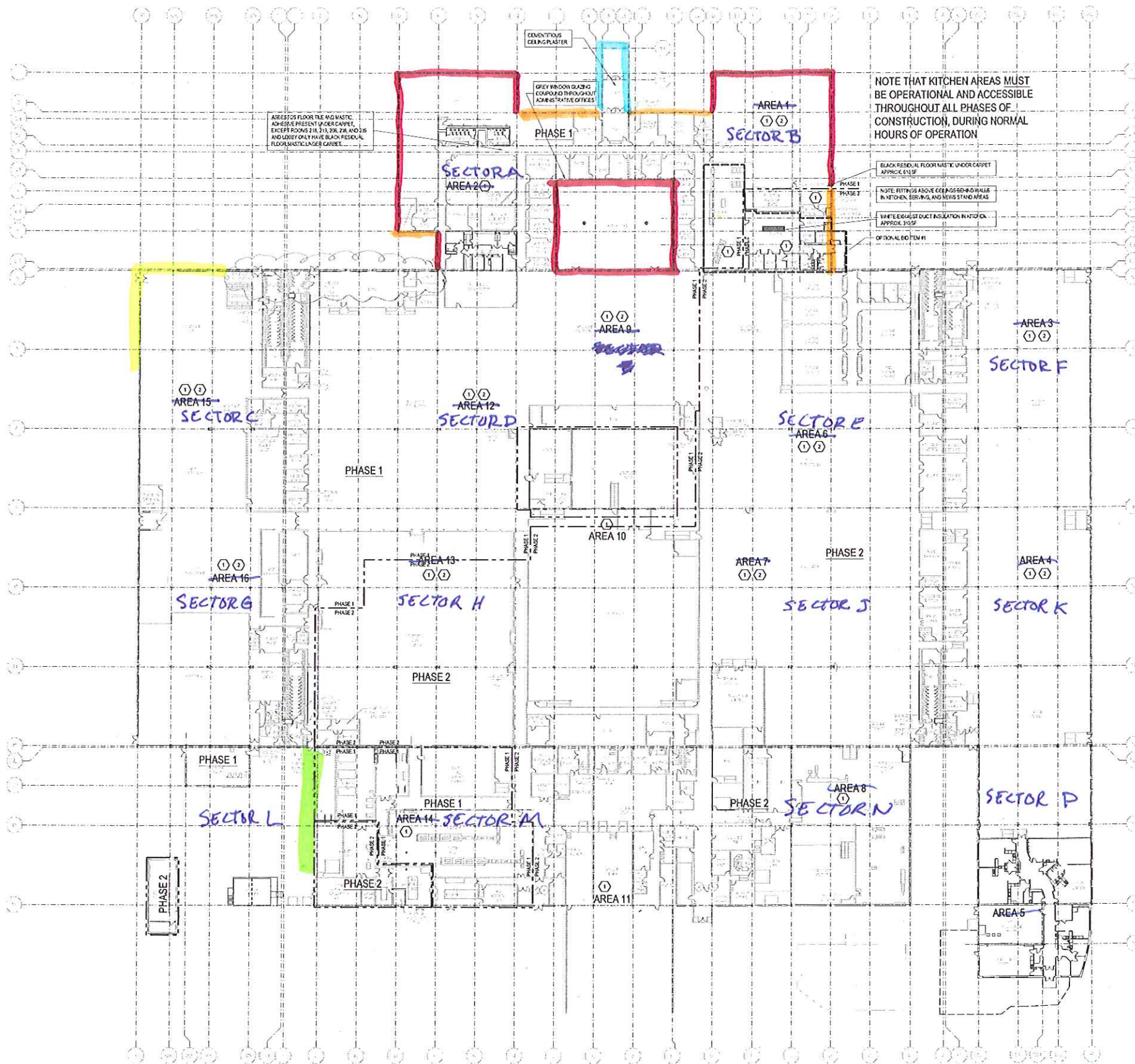
**INTERNATIONAL
COATINGS INC.**

2925 Lucy Lane • Franklin Park, IL 60131 • 847.451.0279 • 800.624.8919 • FAX 847.451.0379
E-Mail: Info@InternationalCoatings.com • www.InternationalCoatings.com

Appendix E

Phase 1 PCB Source Removal Location Key

Phase 1 PCB Source Removal LOCATION Key (1 of 2)



1 OVERALL GROUND FLOOR ASBESTOS LOCATIONS
1/32" = 1'-0"

NOTE THAT CHILD CARE CENTER AREAS MUST BE OPERATIONAL AND ACCESSIBLE THROUGHOUT ALL PHASES OF CONSTRUCTION, DURING NORMAL HOURS OF OPERATION

GENERAL NOTES:

3. ASBESTOS ABATEMENT CONTRACTOR SHALL BECOME FAMILIAR WITH THE WORK AREA AND SHALL DEVELOP AN ASBESTOS MITIGATION PLAN SUBJECT TO THE APPROVAL OF CONTRACTING OFFICER AND HIS /HER TECHNICAL REPRESENTATIVE. PLAN A-1 - B-1 IS FOR LOCATION INFORMATION ONLY AND DOES NOT DELINEATE SUCH ITEMS AS CEILING HEIGHT, INTERIOR PARTITIONING, PLUMBING, VOLUME AND WALLS.

LEGEND:

KEYNOTE
NUMBER

- | | |
|---|---|
| 1 | MUDDIED PIPE FITTING & HANGER INSULATION |
| 2 | ASBESTOS CONTAINING FLOOR TILE AND ASSOCIATED MASTIC ADHESIVE |

NOTE: FITTINGS AND FLOOR TILE TO BE REMOVED ARE PRESENT THROUGHOUT MAJOR AREAS DEPICTED BY KEYNOTE NUMBER - INDIVIDUAL PARTITIONED ROOMS ARE NOT DEPICTED BUT ARE INCLUDED IN THE ABATEMENT SCOPE.

Curtain Wall (TMC)

PRECAST PANELS (TMC)

Canopy (RMT)

NORTH-WEST CORNER
(TMC)

LOADING Dock (TMC)

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SMITH & WESSEL ASSOCIATES, INC.
8 CHURCH STREET
MERRIMAC, MASSACHUSETTS 01860
TEL: 978-346-4800
FAX: 978-346-7265

CERTIFICATIONS		
		

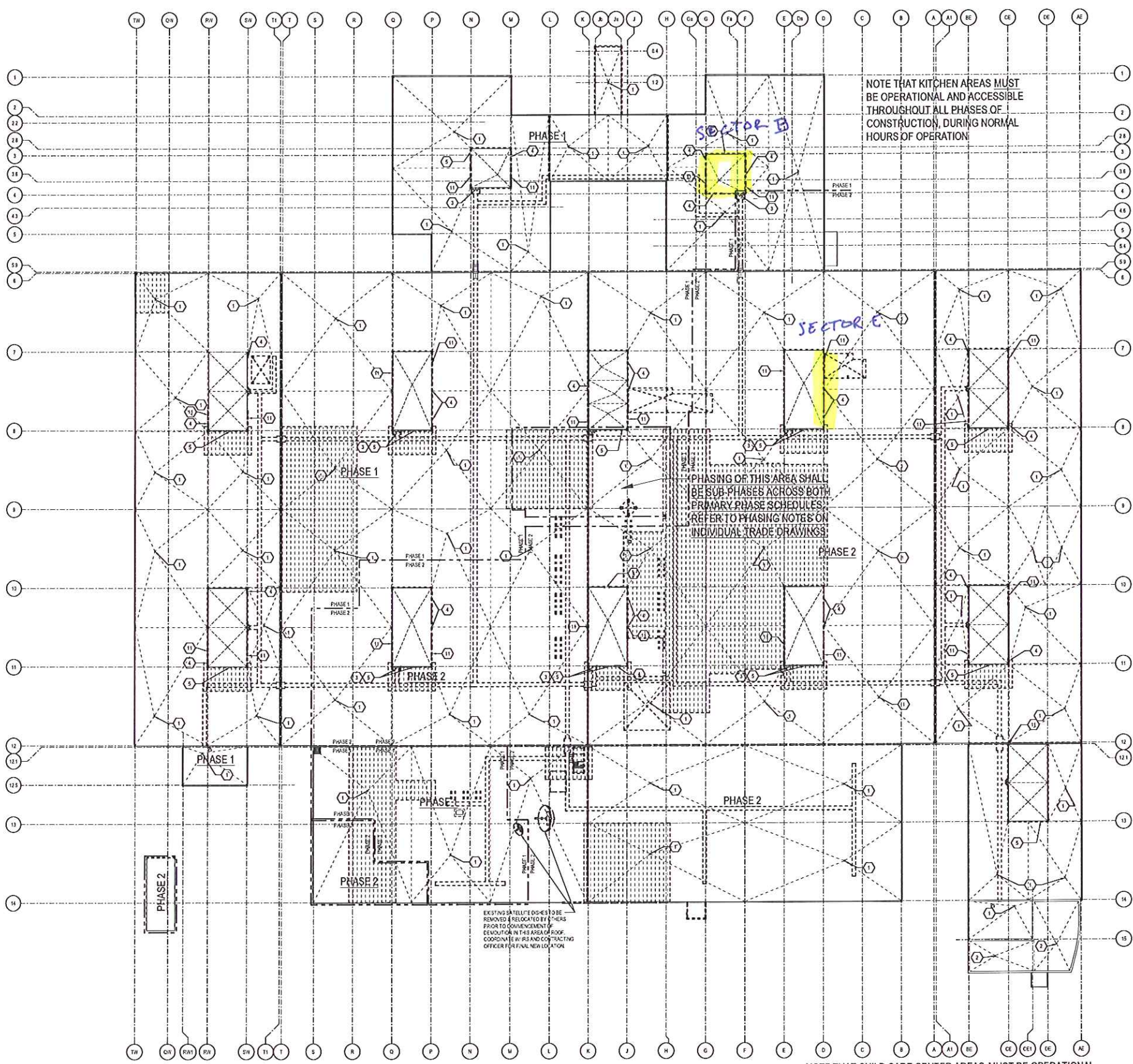
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BUILDING	CONTRACTOR	GROUPING LEAD			
		AE CON. NO.	05-0 P-06-B2-C-0005		
		AE TASK NO.	X-00-00-X-0000		
		CONSTR. CONTR.	X-X-00-X-0000000		
		CONSTR. WORK	X-00-00-X-0000		
		PRIME AE	JONATHAN LEM ARCHITECTS		
		SUB AE	BURT HILL, INC.		
		CONSTR. CO.	700000000000		
		NAME	IRS SERVICE CENTER		
		STREET	310 LOWELL STREET		
CITY/ST/ZIP	ANDOVER	MA	01810		
BUILDING NO.	WA 013122				
OTHER	X-0000000	X-0000000	X-0000000		
BUILDING NO.	X-0000000	X-0000000	X-0000000		

PROJECT	FACILITY CODE	XXXX		
	PROJECT	MODERNIZATION TO ANDOVER IRS SERVICE CENTER		
	TITLE			
	PROJECT	IRS SERVICE CENTER, ANDOVER, MA		
	DESCRIPTION			
	PROJECT NO.	SMA0217		
	GSA PM	ERIAN WONG		
	SUBMISSION	BID DOCUMENTS		
	SUB. DATE	MAY 1, 2009		
	DRAWING TITLE	OVERALL GROUND FLOOR ASBESTOS LOCATIONS PLAN		
DRAWING	FILE NAME	AH-19-SMA0217.DWG		
	FLOOR NO.	01		
	DRAWN BY	DATE DRAFTED: 03/24/08		
	CHECKED BY	SHEET SIZE: 30 X 42		
	DRAWING NO.	<div><div>AH</div><div>1</div><div>00</div><div>DISCIPLINE</div><div>SHEET TYPE</div><div>SEQUENCE</div><div>SHEET</div><div>X</div><div>OF</div><div>XXX</div></div>		

Phase 1 PCB Source Removal Location Key (2 of 2)

-Penthouse
Lowvers



1 OVERALL MAIN ROOF & PENTHOUSE DEMOLITION PLAN
1/32" = 1'-0"

NOTE THAT CHILD CARE CENTER AREAS MUST BE OPERATIONAL
AND ACCESSIBLE THROUGHOUT ALL PHASES OF CONSTRUCTION,
DURING NORMAL HOURS OF OPERATION

GENERAL DEMOLITION NOTES:

1. ALL WORK PERFORMED ON THIS BUILDING SHALL BE IN COMPLIANCE WITH ALL PERTINENT CODES, RULES, REGULATIONS, AND ORDINANCES OF ALL APPLICABLE LOCAL, STATE, AND FEDERAL GOVERNING AUTHORITIES.
2. USE SUITABLE METHODS TO LIMIT DUST AND DIRT. COMPLY WITH GOVERNMENTAL REGULATIONS PERTAINING TO ENVIRONMENTAL AND OTHER PROTECTIONS. CONDUCT OPERATIONS TO PREVENT INJURY TO ALL FACILITIES AND PERSONS.
3. PROMPTLY REPAIR ANY DAMAGES TO FEATURES SCHEDULED TO REMAIN CAUSED BY DEMOLITION OPERATIONS AT NO COST TO OWNER.
4. REFER TO MEP DRAWINGS FOR REMOVALS OF MECHANICAL, ELECTRICAL, PLUMBING AND LIFE SAFETY SYSTEMS.
5. THE EXACT LIMITS OF DEMOLITION AND REMOVALS SHALL BE DETERMINED FROM THE DRAWINGS RELATIVE TO EACH DISCIPLINE. ITEMS REMOVED OR DISTURBED BEYOND THE LIMITS REQUIRED FOR THE INSTALLATION OF NEW SYSTEMS SHALL BE RESTORED WITHOUT ADDITIONAL COST.
6. SCHEDULE DEMOLITION OF EXTERIOR FEATURES TO COINCIDE WITH DISBURSES OF REPLACEMENT FEATURES OR PROVIDE WEATHERTIGHT TEMPORARY ENCLOSURES TO PROVIDE PROTECTION TO OCCUPANTS AND THE BUILDING.
7. UNLESS NOTED OTHERWISE, ITEMS OR SYSTEMS NOTED OR DEPICTED FOR REMOVAL SHALL INCLUDE ALL CUTTING, DISMANTLING, BREAKING UP, ROOFING, HAULING AND LEGAL DISPOSAL OF THE ENTIRE SYSTEM INCLUDING FRAMES, SUPPORTS, REINFORCING, HANGERS, ADHESIVES, SEALANT'S AND EMBEDDED ANCHORAGES.
8. CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL SHORING AND BRACING ASSOCIATED WITH THE DEMOLITION WORK.
9. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IN WRITING OF DISCREPANCIES FOUND ON THE DRAWINGS.
10. CONDUCT OPERATIONS TO PREVENT DAMAGE TO EXISTING FEATURES CONTAINED WITHIN AREAS OF FUTURE PHASES.
11. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND TEMPORARY STORAGE OF EXISTING MATERIALS DESIGNATED TO BE REUSED.
12. REFER TO NEW CONSTRUCTION DRAWINGS FOR ADDITIONAL INFORMATION AT AREAS OF SELECTIVE DEMOLITION.
13. G.C. IS RESPONSIBLE FOR SAVINUT AND REMOVAL OF CONCRETE AND TRENCHING AT EXISTING SLABS REQUIRED FOR INSTALLATION OF ALL NEW UNDERSLAB UTILITIES PLUMBING, CONDUITS, ETC. REFER TO PLUMBING, ELECTRICAL, MECHANICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFO.
14. ASBESTOS CONTAINING MATERIAL HAS BEEN IDENTIFIED IN THE BUILDING. REFER TO THE ASBESTOS LOCATIONS PLAN AT 100 AND THE HAZARDOUS MATERIALS REPORT FOR ADDITIONAL INFORMATION.

DEMOLITION LEGEND:

- DEMOLISH & DISCARD RAISED FLOOR SYSTEM IN THIS AREA.
- CAREFULLY REMOVE RAISED FLOORING SYSTEM IN THIS AREA AND TEMPORARILY STORE SUPPORT SYSTEM FOR REUSE IN AREAS NOTED. PANELS TO BE DISCARDED.
- CAREFULLY REMOVE RAISED FLOORING SYSTEM IN THIS AREA AND TEMPORARILY STORE PANELS & SUPPORT SYSTEM FOR REUSE IN AREAS NOTED.
- CUT OPENING FOR NEW ROOF FEATURE. REFER TO ROOF PLAN & STRUCTURAL DIVS FOR MORE INFORMATION.
- CUT OPENING IN EXISTING SLAB FOR NEW FEATURE. REFER TO FLOOR PLANS & STRUCTURAL DIVS FOR MORE INFORMATION.
- PARTITIONS TO BE DEMOLISHED.
- WINDOWS AND FRAMES TO BE DEMOLISHED.
- DOOR(S) AND FRAME TO BE DEMOLISHED.
- EXISTING SUSPENDED CEILING AND SUPPORTS TO BE REMOVED. REMOVE BACK TO LOCATION OF ATTACHMENT ALL ASSOCIATED HANGERS, FRAMING, BLOCKING, ETC.

KEYNOTES FOR DEMOLITION:

- | KEYNOTE NUMBER | DESCRIPTION |
|----------------|---|
| 1 | REMOVE EXISTING ROOF DRAIN. REFER TO PLUMBING DIVS FOR ADDITIONAL INFORMATION. |
| 2 | EXISTING ROOF DRAIN TO REMAIN. |
| 3 | EXISTING PENTHOUSE DOOR(S) AND FRAME TO BE REMOVED. REFER TO ROOF PLAN FOR NEW LOCATION OF NEW DOORS. |
| 4 | REMOVE EXISTING MECHANICAL LOUVER. REFER TO ROOF PLAN FOR LOCATION OF NEW LOUVER. |
| 5 | REMOVE ALL EXISTING METAL SIGNS ON EXISTING MECHANICAL PENT-HOUSES. |
| 6 | NOT USED. |
| 7 | REFER TO ENLARGED ARCHITECTURAL PLANS & ROPS FOR EXTENT OF RECONFIGURED TOILET ROOMS. |
| 8 | NOT USED. |
| 9 | EXISTING MEZZANINE, STAIRS AND ALL ASSOCIATED SUPPORT STRUCTURE TO BE REMOVED. |
| 10 | EXISTING LOADING DOCK RETAINING WALLS & RAMP TO BE REMOVED. SEE CIVIL DIVS C-100 FOR MORE INFO. |
| 11 | CUT OPENING FOR NEW LOUVER(S). REFER TO ROOF PLAN MECH DIVS & CIVIL STRUCT DIVS FOR MORE INFO. SEE AE-603 FOR NEW LOUVER TYPES. |
| 12 | CAREFULLY REMOVE AND STORE FOR RE-INSTALLATION THE EXISTING PLAYGROUND EQUIPMENT, FENCING AND RELATED MATERIALS. REFER TO PLANS FOR NEW LOCATION. |

MAIN ROOF & PENTHOUSE DEMOLITION NOTES:

1. REMOVE EXISTING BALLAST, ROOF MEMBRANE, INSULATION & ROOF CORING AT ALL ROOFING LOCATIONS INCLUDING PENT-HOUSES. UNLESS NOTED OTHERWISE, REFER TO OTHER DEMOLITION DIVS, FLOOR PLANS, ELEVATIONS & DETAILS FOR AREAS & ITEMS TO BE SELECTIVELY DEMOLISHED.
2. REMOVE ALL EXISTING ROOF WALKWAY FLOWERS.
3. REMOVE ALL UNUSED MECHANICAL EQUIPMENT SUPPORTS AND PLATFORMS. REFER TO MECHANICAL DIVS FOR MORE INFORMATION.
4. REMOVE EXISTING METAL SIGNS ON ALL EXISTING MECHANICAL PENT-HOUSES.
5. REMOVE EXISTING LIGHTNING PROTECTION SYSTEM. EXISTING LEADS WHICH ARE CONCEALED WITHIN BUILDING SHALL BE REUSED TO THE EXTENT FEASIBLE. PROVIDE ADDITIONAL NEW LEADS AS REQUIRED TO CREATE A COMPLETE NEW SYSTEM. REFER TO ELECTRICAL SPECIFICATION SECT. 26.4113 LIGHTNING PROTECTION FOR MORE INFORMATION ON NEW LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

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FARMINGTON, CT
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WASH DC, DC

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MASSACHUSETTS
SEAL

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SECTION 101
GENERAL NOTES

MARK

DATE

REVISION

DESCRIPTION

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05-28-2009

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PRIVE A/E

JONATHAN LEVI ARCHITECTS

SUB A/E

BURT HILL, INC.

CONSTR CON

XXXXXXXXXX

NAME

IRS SERVICE CENTER

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310 LOWELL STREET

CITY/ST/ZIP

ANDOVER MA 01810

BUILDING NO

MA 6197 Z2

OTHER

XXXXXXXXXX XXXXXXXX XXXXXXXX

BUILDING NO

XXXXXXXXXX XXXXXXXX XXXXXXXX

FACILITY CODE

XXXX

PROJECT

MODERNIZATION TO ANDOVER IRS SERVICE CENTER

TITLE

IRS SERVICE CENTER, ANDOVER, MA

PROJECT DESCRIPTION

IRS SERVICE CENTER, ANDOVER, MA

PROJECT NO

584X0217

GSA PM

35AN WONG

SUBMISSION

3-D DOCUMENTS

SUB DATE

MAY 1, 2009

DRAWING TITLE

OVERALL MAIN ROOF & PENTHOUSE DEMOLITION PLAN

FLOOR NAME

AD-121 584X217 DIVS

FILE NO

11

DRAWN BY

XXX

CHECKED BY

XXX

DATE DRAFTED

12/11/06

SHEET SIZE

33 X 42

DRAWING NO

AD 1 01

DISCIPLINE

XXX

SHEET TYPE

XXX

OF

XXX

SEQUENCE

XXX

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